UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,817	02/19/2002	Douglas R. Manley	10011387-1	7130

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EXAMINER
TRIMMINGS, JOHN P

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 08/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/078,817	MANLEY ET AL.
	Examiner	Art Unit	
	John P. Trimmings	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 July 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1,3-5,7-15,17,18,20,22-25,27,28 and 30-32</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1, 3-5, 7-15, 17-18, 20, 22-25, 27-28 and 30-32</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>08 April 2005</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to the applicant's amendment and RCE dated 7/1/2005.

The applicant amended claims 1, 7-9, 20, 22, 25 and 28.

The applicant canceled Claim 6.

Claims 1, 3-5, 7-15, 17-18, 20, 22-25, 27-28 and 30-32 are pending.

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/1/2005 has been entered.

Response to Amendment

2.   Applicant's arguments with respect to claims 1, 3-5, 7-15, 17-18, 20, 22-25, 27-28 and 30-32 have been considered but are moot in view of the new grounds of rejection (see below).

Claim Rejections - 35 USC § 103

3.   Claims 1, 3-5, 7-10, 12-15, 17, 20, 22-25, 27-28 and 30-32 are rejected under 35

U.S.C. 103(a) as being unpatentable over Banks, U.S. Patent No. 6487593, in view of

Wei et al., U.S. Patent No. 6515967, and further in view of Sasin et al., U.S. Patent No.

6011830.

As per Claims 1, 15, 20, 25 and 28:

Banks teaches a method and system for diagnosing faults in a system under test

(SUT) (column 1 lines 64-66), the SUT defining data transmission paths through which

data packets are transferred (see FIG.1 and Background), said method comprising:

providing a dataflow model corresponding to the error-free behavior of the SUT (see

FIG.1 where data flows from DPU to DPU by the edges/lines depicted), the dataflow

model including edges, each of the edges corresponding to a portion of one of the data

transmission paths of the SUT (column 2 lines 66-67, column 3 lines 1-7) capable of

introducing errors in data transfer (column 1 lines 41-60); identifying portions of the data

transmission paths of the SUT capable of introducing errors in data transfer (column 1

lines 66-67 and column 2 lines 1-8), but fails to further provide constraints. But in the

analogous art of Wei et al., this feature is taught, wherein the system/method provides

constraints (for example, column 6 lines 21-23, drops >20%) defining relationships of at

least some of the portions of the data transmission paths identified with respect to the

data packets (see FIG.1 and FIG.2 for paths); and diagnosing the SUT with respect to

the constraints (column 6 lines 56-65). And Wei et al., in column 2 lines 46-50, boasts of

a real-time fault detection system. One with ordinary skill in the art at the time of the

invention, motivated as suggested, would have found it obvious to include the test

constraint capabilities of Wei et al. with the network identification system of Banks in order to detect faults in real-time. But neither Banks nor Wei et al. teach diagnosing the SUT with respect to the constraints by analyzing the test results with respect to the dataflow model. But in an analogous art, Sasin et al. does disclose this feature, wherein identifying comprises providing a dataflow model corresponding to the SUT (FIG.3b TSTM-G, TSTM-S), each of which corresponds to a portion of one of the data transmission paths of the SUT capable of introducing errors in data transfer (column 14 lines 7-27). And in column 5 lines 8-18, the advantage cited is that of a test system which quickly performs complex operational tests while conforming to real conditions. One with ordinary skill in the art at the time of the inventions, motivated as suggested, would find it obvious to combine the techniques of Sasin et al. with the method of Banks and Wei et al., in order to provide superior testing of a transmission system.

As per Claim 3:

Banks further teaches the method of claim 1, wherein the dataflow model includes vertices (see FIG.1 DPU1-9), each of the edges (lines between vertices) being defined between two of the vertices. And in view of the motivation previously stated, the claim is rejected.

As per Claim 4:

Banks further teaches the method of claim 3, wherein each of the vertices is at least one of a termination of an edge (FIG.1 DPU9 for instance) and representative of a location where an operation with respect to data can occur (FIG.1 data processing units DPU1-9). And in view of the motivation previously stated, the claim is rejected.

As per Claim 5:

Banks, Wei et al. and Sasin et al. further teach the method of claim 4, wherein the operation corresponding to a vertex includes at least one of dropping data, splitting data, routing data, replicating data and combining data (Wei et al. column 6 lines 21-23 drops>20%). And in view of the motivation previously stated, the claim is rejected.

As per Claim 7:

Banks, Wei et al., and Sasin et al. further teach the method of claim 1, wherein the SUT includes counters corresponding to at least some of the edges of the dataflow model (Sasin et al. column 2 lines 59-67 and column 3 lines 1-7); and further comprising: receiving information, corresponding to the test results, from at least some of the counters (FIG.3b test result error output). And in view of the motivation previously stated, the claim is rejected.

As per Claim 8:

Banks, Wei et al., and Sasin et al. further teach the method of claim 1, wherein the dataflow model is a directed graph (for example, Banks FIG.1). And in view of the motivation previously stated, the claim is rejected.

As per Claim 9:

Sasin et al. further teaches the method of claim 1, wherein analyzing the test results comprises: receiving information corresponding to failed data transfers; and identifying portions of the SUT potentially associated with the failed data transfers (column 39 lines 6-20). And in view of the motivation previously stated, the claim is rejected.

As per Claim 10:

Sasin et al. further teaches the method of claim 9, wherein analyzing the test results comprises: exonerating portions of the SUT initially identified as being associated with the failed data transfers if those portions of the SUT are determined not to have initiated at least one of the failed data transfers (column 26 lines 15-67). And in view of the motivation previously stated, the claim is rejected.

As per Claim 12:

Banks, Wei et al., and Sasin et al. further teach the method of claim 1, wherein the constraints correspond to data flow characteristics of the SUT exhibited with respect to the vertices (for example, Wei et al, column 6 lines 21-23). And in view of the motivation previously stated, the claim is rejected.

As per Claims 13 and 14:

Banks, Wei et al., and Sasin et al. further teach the method of claim 12, wherein at least one of the constraints of at least one of the vertices relates that an amount of good data flowing into the vertex corresponds to an amount of data flowing from the vertex (for example, Wei et al. column 6 lines 13-43). And in view of the motivation previously stated, the claims are rejected.

As per Claim 17:

Wei et al. further teaches the method of claim 15, wherein diagnosing the SUT comprises: generating information indicative of the manner of failure (Wei et al. column 6 lines 43-65). And in view of the motivation previously stated, the claim is rejected.

As per Claim 22:

Sasin et al. further teaches the system of claim 20, wherein said reasoning

engine is adapted to evaluate the test results of the SUT with respect to constraints, the

constraints defining relationships of at least some of the portions of the dataflow model

(FIG.3b via Buffer A to CMP with TSTM-Sim via Buffer B). And in view of the motivation

previously stated, the claim is rejected.

As per Claim 23:

Banks, Wei et al., and Sasin et al. further teach the system of claim 20, wherein

said reasoning engine is adapted to receive information corresponding to failed data

transfers and identify portions of the SUT potentially associated with the failed data

transfers (column 14 lines 1-67 of Sasin et al.). And in view of the motivation previously

stated, the claim is rejected.

As per Claim 24:

Sasin et al. further teaches the system of claim 20, further comprising: an SUT

communicatively coupled to at least one of said dataflow model and said reasoning

engine (FIG.3b SUT designated by "to BD-INT", commands to and signals from SUT).

And in view of the motivation previously stated, the claim is rejected.

As per Claim 27:

Sasin et al. further teaches the system of claim 25, further comprising:

means for testing the SUT to generate test results (CMP and error output in FIG.3b).

And in view of the motivation previously stated, the claim is rejected.

As per Claim 30:

Banks, Wei et al., and Sasin et al. further teach analyzing results with respect to

the time of error. Sasin et al. teaches this feature wherein the SUT test results are

received (FIG.3b to BD-INT) diagnosing comprises analyzing results (FIG.3b CMP,

column 14 lines 7-40) associated with a time of error. And in view of the motivation

previously stated, the claim is rejected.

As per Claims 31 and 32:

Banks, Wei et al., and Sasin et al. further teach the diagnosis system of claim 28,

wherein said logic configured to diagnose includes logic configured to identify portions

of the SUT potentially associated with failed data transfers, and said logic configured to

diagnose includes logic configured to exonerate components initially identified as being

associated with the failed data transfers. Sasin et al. teaches these features in column 3

lines 8-21 (data transfers), and column 26 lines 15-67 (resetting states). And in view of

the motivation previously stated, the claim is rejected.

4.   Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Banks, U.S. Patent No. 6487593, in view of Wei et al., U.S. Patent No. 6515967, in

view of Sasin et al., U.S. Patent No. 6011830 as applied to Claim 1, and further in view

of Circo, U.S. Patent No. 4677614.

As per Claim 11:

As applied to Claim 1, Banks, Wei et al., and Sasin et al. fail to specifically claim

that, wherein diagnosing the SUT comprises: receiving information regarding data

transfers with respect to the portions identified, the information being obtained via cyclic

redundancy checking. But in an analogous art, Circo does teach this feature (see FIG.1

A25 SDLC, and column 10 lines 6-34). And column 1 lines 18-60 recite the advantage

that the invention gives more reliable service by eliminating reliance on one master

node. One with ordinary skill in the art at the time of the invention, motivated as

suggested, would find it obvious to combine the characteristics, including CRC

checking, to the device and method of Banks, Wei et al., and Sasin et al..

As per Claim 18:

As applied to Claim 17, Banks, Wei et al., and Sasin et al. fail to further teach the

method using CRC. But Circo does teach this, wherein the flow of data is a flow of data

packets (column 12 lines 16-40); and wherein diagnosing the SUT further comprises:

analyzing information acquired via cyclic redundancy checks performed at various

locations associated with the flow of data (column 12 lines 47-59). And in view of the

motivation previously stated, the claim is rejected.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11
F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225
USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA
1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*,
418 F.2d 528, 163 USPQ 644 (CCPA 1969).
A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be
used to overcome an actual or provisional rejection based on a nonstatutory double
patenting ground provided the conflicting application or patent is shown to be commonly
owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5.   Claims 1, 3, 4, 5, 7, 9 and 10 are provisionally rejected under the judicially created doctrine of double patenting over claims 2, 2, 2, 3, 5, 7 and 8 respectively of copending Application No. 10/099,335. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: each of the respective claims in the co-pending application anticipate the claims in the instant application.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Trimmings whose telephone number is (571) 272-3830. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.
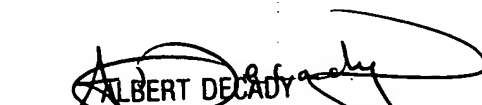
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John P Trimmings
Examiner
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